

CLAIMS

[00156] We claim:

1. A method for reducing plant sensitivity to at least one pathogen or at least one herbivore comprising overexpressing a lipoxygenase gene in said plant.
2. The method of claim 1, wherein said expression of said lipoxygenase gene in said plants is constitutive.
3. The method of claim 1, wherein the expressed lipoxygenase has 9-lipoxygenase activity.
4. The method of claim 1, wherein said lipoxygenase gene is a plant lipoxygenase gene.
5. The method of claim 1, wherein said lipoxygenase gene is a Solanacea plant lipoxygenase gene.
6. The method of claim 1, wherein said lipoxygenase gene comprises a nucleic acid sequence that encodes a protein that is at least 80% homologous to the lipoxygenase of SEQ ID NO:1 and has lipoxygenase activity.
7. The method of claim 6, wherein said lipoxygenase gene comprises a nucleic acid sequence that encodes the amino acid sequence of SEQ ID NO:1.
8. The method of claim 1 further comprising contacting the genome of said plant with an expression cassette comprising a sequence encoding said lipoxygenase gene operably linked to an expression control sequence that is functional in plants under conditions that

permit integration of said expression cassette into the genome of said plant and wherein said expression cassette is integrated into the genome of said plant.

9. The method of claim 8, wherein said expression control sequence is an expression control sequence which is constitutive in plants.
10. The method of claim 9, wherein said constitutive expression control sequence is the cauliflower mosaic virus 35S promoter.
11. The method of claim 1, wherein said lipoxygenase genes is overexpressed in the stems, the leaves, and the roots of said plant.
12. An expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.
13. The expression cassette of claim 12, wherein said nucleic acid encodes a protein having 9-lipoxygenase activity.
14. The expression cassette of claim 12, wherein said nucleic acid encodes the lipoxygenase of SEQ ID NO:1.
15. The expression cassette of claim 12, wherein said expression control sequence is the cauliflower mosaic virus 35S promoter.

16. A vector comprising an expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.
17. A transformed plant cell comprising an expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.
18. A transformed plant cell comprising a vector comprising an expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.
19. A transformed plant comprising an expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.
20. A transformed plant comprising a vector comprising an expression cassette which is functional in plant cells and plants comprising an expression control sequence having constitutive activity in plants operably linked to a nucleic acid encoding a protein that is

at least 90% homologous to SEQ ID NO:1 wherein said protein has lipoxygenase activity.

21. A transformed plant, comprising the transformed plant cell of claim 17.